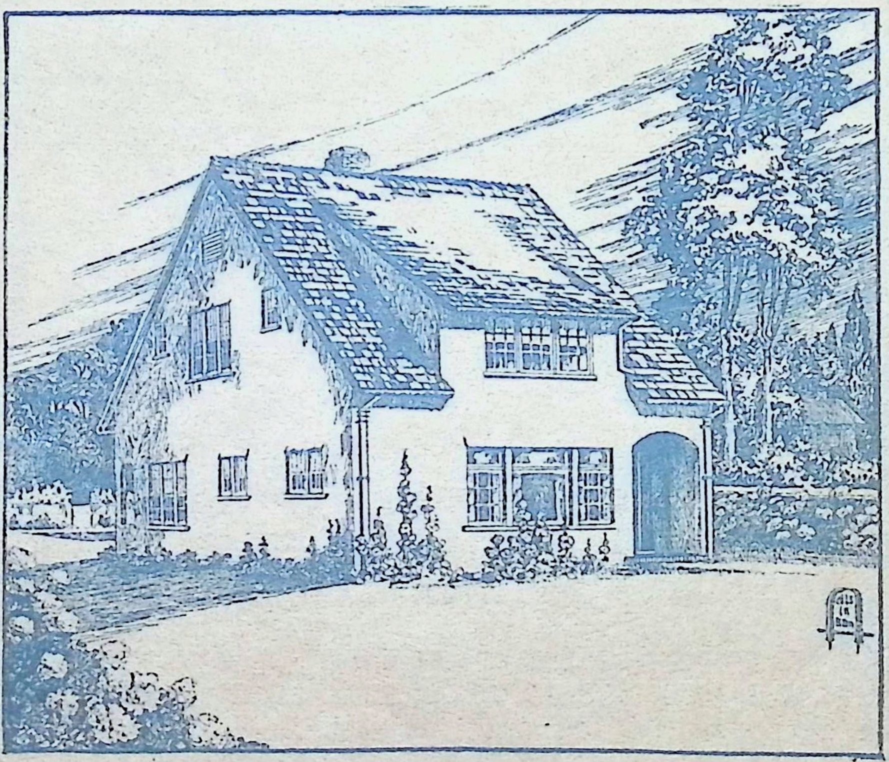
Reprint from

THE CRAFTSMAN

"The lyf so short, the craft so long to lerne."



Craftsman House No. 118: Designed by Gustav Stickley

TWO CRAFTSMAN DESIGNS FOR BRICK HOUSES

THE CRAFTSMAN FIREPLACE: A COMPLETE SYSTEM OF HEATING AND VENTILATING

FORTY-ONE-WEST-THIRTY-FOURTH-STREET-NEW-YORK

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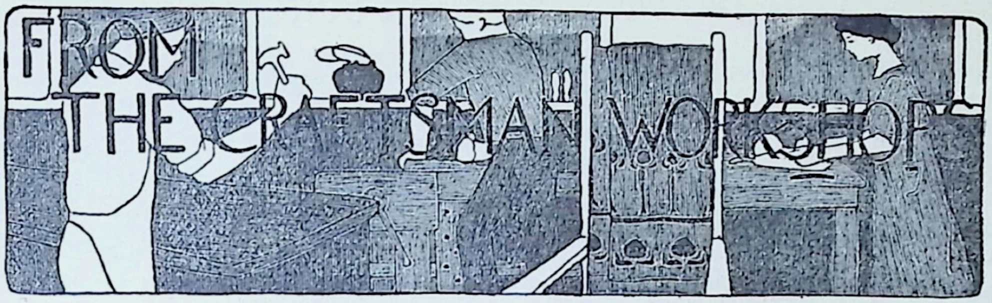


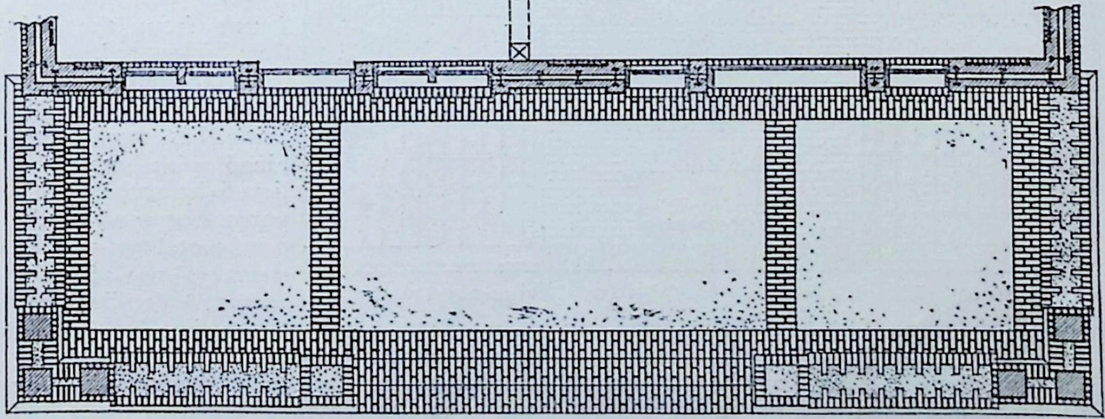
TWO CRAFTSMAN BRICK BUNGALOWS

From The Craftsman, February, 1912.

BRICK is undoubtedly advancing in favor as a building material for houses. This is not only because people are demanding a more permanent form of home architecture, but because the wood supply of the country is becoming a matter for serious consideration, and some material must be found to take the place of wood which is equally or even more satisfactory.

Brick nowadays is much more beautiful and durable than formerly. It shows significant signs of eventually superseding wood, at least in the exterior construction of houses, and is becoming a feature of interior finish as well. It is adapted to almost any style of building, whether large or small, furnishing a delightful note of color to any landscape, and carrying a distinct and pleasing individuality. Although the first expense of building a brick house is somewhat greater than that of a frame house, yet in the end it is decidedly the more economical, for after it is once finished it requires almost no additional expense to keep it in order, while a frame house requires constant repairing and painting. Is it not much more profitable to build better and repair less? Besides, there are other advantages. A brick house is more easily heated during the winter, and is far cooler in the summer than a frame house. Brick being practically fireproof, the rate of insurance is less, and being more durable the building does not deteriorate in value so quickly.

Perhaps one of the most notable things about modern brick is the way it is laid up, for the result is so much more interesting and beautiful than with the old-time method. The old brick was of a uniform red, laid up with a narrow white joint. This mortar was made of fine sand, cement and lime, and the joints were very narrow and pointed smooth. Sometimes these joints were painted a glaring white so there was no mistaking the regularity and perfection of the bond. But the modern brick is far removed from this, for the aim now is to avoid startling contrasts and pronounced colors. If the house is to be of red brick, they are used in many different harmonious tones; if of buff brick, they are in shades of old buff, golden brown and deep cream. These are placed in position about as they



WORKING PLAN OF PORCH FOR CRAFTSMAN BUNGALOW NO. 129
SHOWING DETAIL OF BRICK AND CONCRETE CONSTRUCTION.

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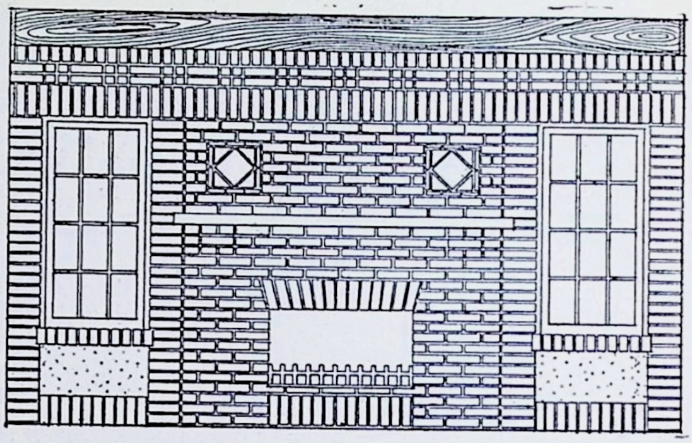


BUNGALOW NO. 130: BRICK CONSTRUCTION ABOUT FIREPLACE IN DINING-ROOM ALCOVE.

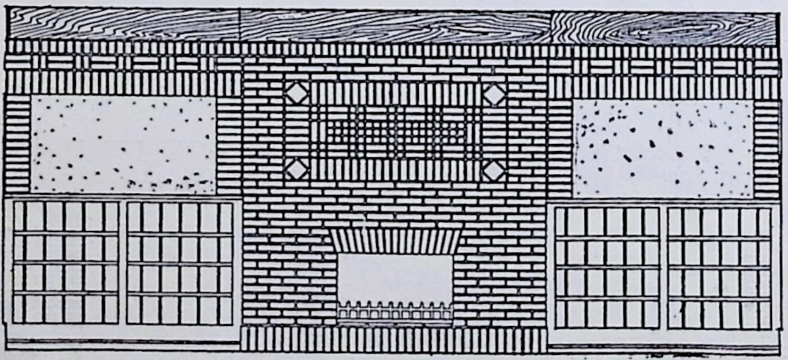
come, care being taken not to put together any two of a like tone. This gives an indescribable variety to the wall, an effect of great uniformity of tone, yet full of interest that is far removed from the monotonous solid red wall of old time.

The new mortar is made to produce a texture similar to that of the brick and is often one-third or one-half the thickness of the brick. This innovation is made practical by the improved method of the mixture. Grit, sand, cement, lime and coloring matter are mixed according to an exact formula. The "grit" consists of small pebbles screened from sand in order to allow a perfect measuring of sand and "grit." The sand is coarse and sharp and is never taken from a beach, for in the spring the effervescing of salt water causes an unpleasant disfigurement of the wall.

We give one formula for mixing mortar, and it is hardly necessary to add that any formula used must be strictly adhered to throughout the building, so that no variation of shade mars the perfection:

"Grit"	3	parts
Sand	5	"
Cement	1	"
Lime Putty (hydrated lime)....	1/2	"
Brown (paste)	1/3	"
Yellow (powder)	1/3	"
Black (paste)	1/50	"

The joints are finished in many ways, though the most frequently used are the "rough cut flush," made by allowing the mortar to ooze out beyond the surface of the brick and then cutting it off with a sharp, quick stroke of the trowel, and the "raked out joint" made by cutting the joint back from the surface of the brick with the point of the trowel, a nail or a bit of wood. In both cases the mortar should show as much texture as the brick.



BUNGALOW NO. 130: USE OF CONCRETE AND BRICK IN LIVING-ROOM FIREPLACE.

BELIEVING, therefore, that there are great possibilities for durability and beauty in the modern use of brick, we have planned this month two bungalows which embody several new ideas in brick construction. The use of brick in the interior as well as the exterior of these bungalows is of especial interest, and we are giving several drawings which show in detail the great decorative effect obtained by this new method. Rough surfaced, hard-baked brick, of several harmonious tones of red or brown, is to be used, which gives a rich sense of warm, friendly color decidedly different from the old-time lifeless red.

In the exterior of these bungalows the brick has been combined with stone, relieved by wood in the upper story and by the ornamental as well as structural use of heavy beams. A detailed floor plan of the porch of the first house, No. 129, is given, showing how an interesting combination of concrete, brick and stone can be made. Dividing the floor space into three sections by the use of brick brings about a charming decorative effect, while the low stone balustrade gives a sense of seclusion and permits a note of color to appear in the form of flowers or ferns placed upon the low corner posts.

Formerly the brick walls of a house were laid up in an eight- or twelve-inch solid wall, and the plaster was put directly on the inside of the wall. A wall constructed in this way sweats, so it was found necessary to furr it, leaving an air space between the brick wall and the plaster.

The walls of these bungalows are made by erecting two four-inch walls, side by side, leaving a two-inch air space between. These walls are tied together by metal tie straps inserted every few courses. This provides a good air space all around the house, giving perfect insulation from heat and cold, and at the same time it allows the use of fancy brick for the outside and common brick for the inside wall, which considerably lessens the expense of building. The cost of furring will be saved also, for the plaster can be put directly on the inside wall, as the air space will prevent condensation or sweating. The partitions of these houses are of brick, the wall at the baseboard, side and head casings being eight inches thick, while the panels between are only four inches thick. These panels are plastered on both sides, leaving a reveal between the plastered panels and casings of about one and one-quarter inches. Doors and windows are hung on jambs only, expensive frames and trim being thus saved. This treatment of the walls gives æsthetic quality to the whole interior.

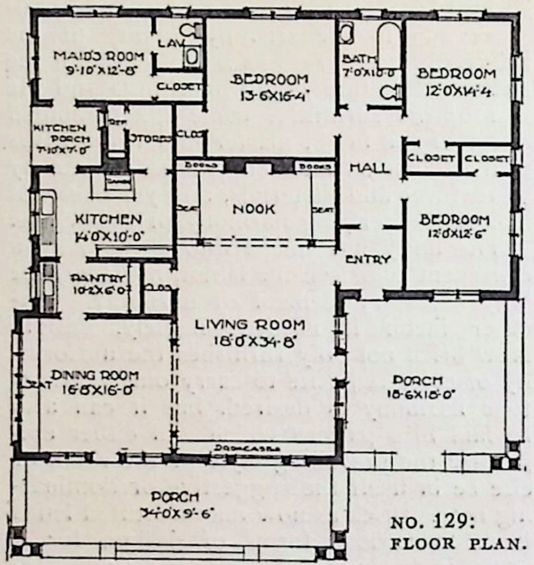
The use of brick in the interior of a house not only lends it decorative charm and individuality, but is a source of economy. The interior wood finish of a house is always expensive, because it requires skilled labor, the best of materials, and cannot be done quickly.

The main walls only of these houses have been planned to be built of brick, but where partitions are only suggested—as between the living and dining rooms and inglenook of the first bungalow, No. 129—we have used the post and panel construction in wood. As the interior view shows, wooden ceiling beams mark the division between the rooms and run around the walls above the brick frieze; and the built-in seats and bookshelves of the nook, as well as the long window seat in the dining room, are all of wood, the seats being paneled with V-jointed boards. Not only does this use of woodwork add to the friendly quality of the interior, but it serves as a link between the structural features, built-in fittings and the rest of the furniture, while the combined effect of the brick, plaster and wood gives to the rooms an interesting sense of variety of textures and materials, and yet does not mar the underlying harmony of the whole.

The unity introduced into a room by a consistent color scheme is not, however, the only necessary element of harmony. Another factor is needed: namely, design. Now brick not only furnishes the uniformity of color requisite to carry out whatever tone harmony is desired, but it can also be laid in a pattern which will either emphasize the prevailing style of the room or else be in itself the suggestive or dominating note. Brick as now manufactured lends itself to various forms of design, for it comes in so many sizes that almost any geometrical pattern can be carried out with it, and the finished frieze, support or arch will have almost the quality of a mosaic.

A frieze such as we have designed in these two bungalows, running around the whole room, has therefore the double interest of pleasing color and design. The interior view of bungalow No. 129 and the details given of the two fireplaces in the second bungalow, No. 130, illustrate the decorative results of this method of wall treatment. If the bricks are well chosen as to color and laid with good judgment and taste, they are most effective, and add to a room a rich note not unlike that of old tapestries. They can be laid in many pattern, intricate or simple, according to the desire of the owner. We are showing three simple styles that are both practical and pleasing. In planning the floor space of the first bungalow, No. 129, convenience—always an important item in home building—was carefully considered, and a study of the plan will reveal how satisfactorily it has all been worked out. A roomy, pleasant, homelike atmosphere is noticed on entering the house, brought about partly by the view from the large living room into the bright, sunny dining room, and the cozy nook by the fireplace with shelves of books within easy reach, lights conveniently arranged, and an open fire to give warmth and cheer. The whole effect is rich, genial, attractive,—qualities so endearing in a home that they become another cause of desire for permanence.

TWO CRAFTSMAN BRICK BUNGALOWS



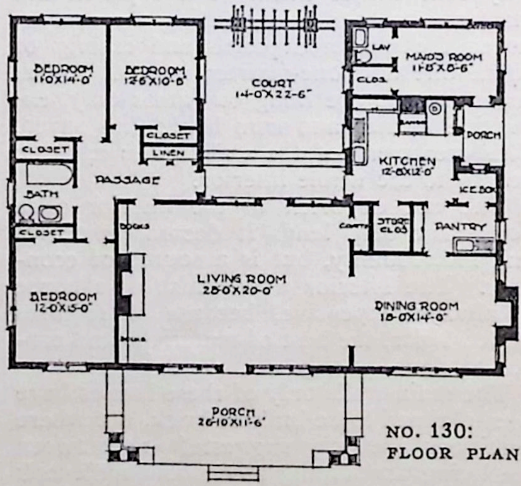
NO. 129: FLOOR PLAN.

Every convenience has been planned for the kitchen. The pantry, which is indispensable for serving and prevents the kitchen odors from entering the dining room, is fitted with a sink and draining board on each side. Another sink and large drain board are placed in the kitchen under the windows so that plenty of light can be had at this necessary working place. The range is within easy reach, a good-sized storeroom is provided, and even a cheerful kitchen porch, which serves the combined purpose of separating the maid's sleeping room from the kitchen, giving access to the refrigerator, and holding extra vegetables and different working accessories of the kitchen.

The bedrooms are shut off from the kitchen side of the house and the bath is placed conveniently. Not a particle of space is wasted in this plan, which includes living room, dining room, kitchen, maid's room, three other bedrooms, hall, bathroom, many closets and two porches, either of which is large enough for an outside living room in summer.

The floor plan of the second bungalow, No. 130, is if anything even more interesting than the first one. This gives a large living room with a dining room which is practically an extension of it. As one enters this room a direct view is had into the open pergola court, and also the fireplaces of both rooms can be seen, which gives a combined sense of home comfort and outdoor delight. The color of this room, brought about by the rich tones of the rough-surfaced brick, is especially restful, and the light from the fireplaces and from the windows that open onto the court add to the warmth and cheerfulness of its welcome.

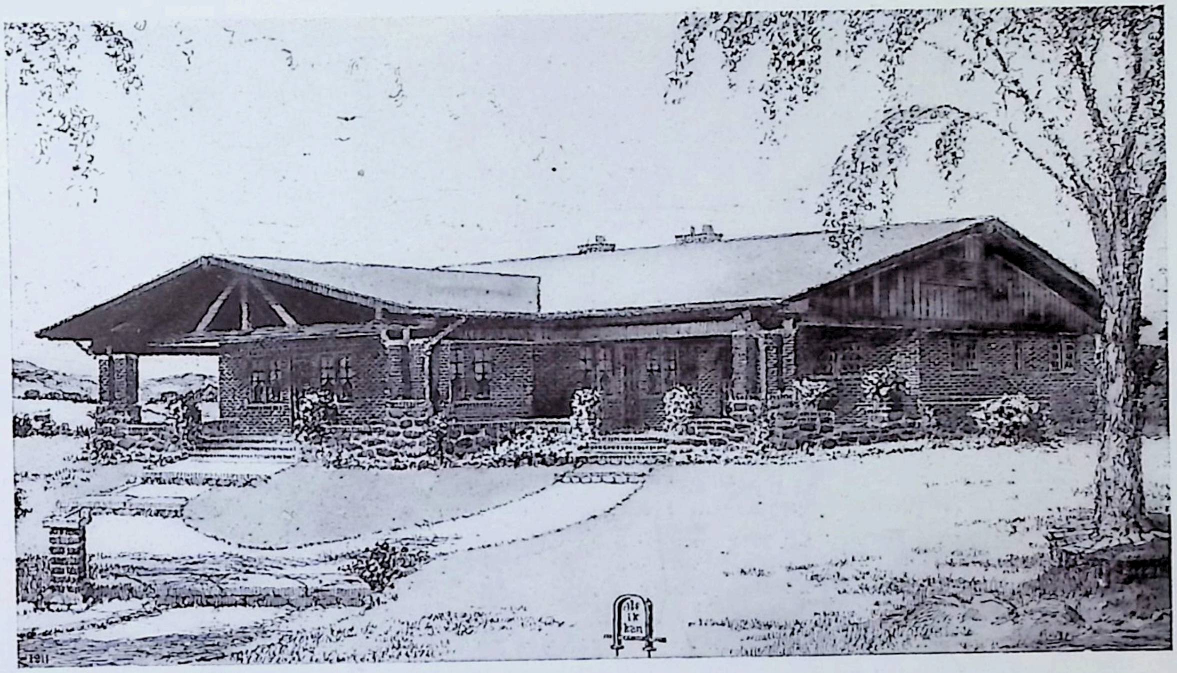
The placing of the bedrooms upon one side of the house and the kitchen and dining room upon the other is particularly happy, for each is thus practically shut off from the other. The pergola court with hanging vines and splashing fountain makes a delightful passageway between the two divisions. A small hall near the living room permits indirect entrance into the bedrooms, thus giving a desired sense of privacy. The kitchen is provided with a convenient and pleasant little porch, similar to the one in No. 129. And there is also a large ice-box, pantry, store closets, two sinks, with the maid's room within easy reach, yet separated by the porch. There is a similar number of rooms in each house, the court of one taking the place of the second porch of the other, but the arrangement of the given space is decidedly different in each bungalow; each one is attractive in an individual way to suit the needs or pleasures of different people, yet both are practical and homelike.



NO. 130: FLOOR PLAN.

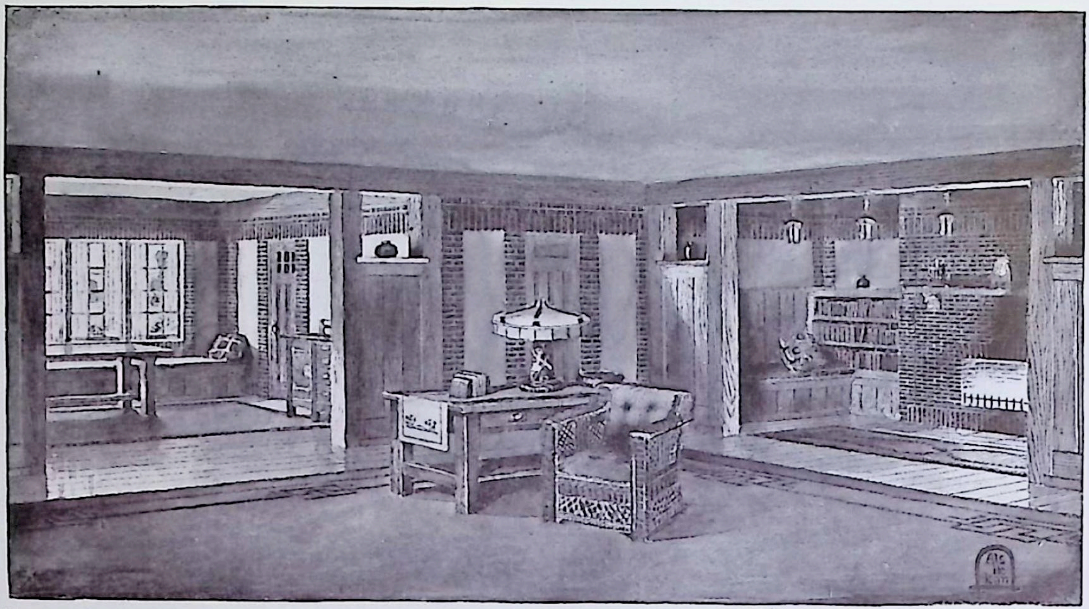
These bungalows have been designed especially for Eastern climates, and are therefore fitted with Craftsman fireplaces. This remarkable new system of heating supplies the warmth of a furnace and combines with it the pleasure of an open fire.

(See full description of CRAFTSMAN Fireplace in this reprint.)



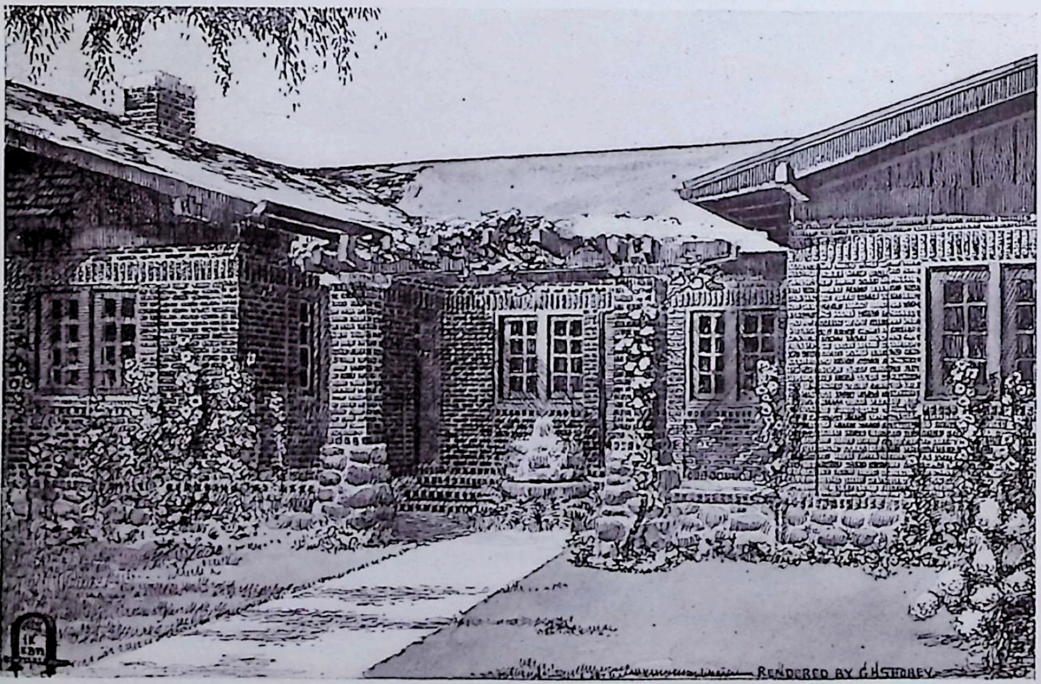
Designed by Gustav Stickley.

A CRAFTSMAN BRICK BUNGALOW WITH CYPRESS GABLES: NO. 129: FOR FLOOR PLANS AND VIEW OF INTERIOR SEE PAGE 556.



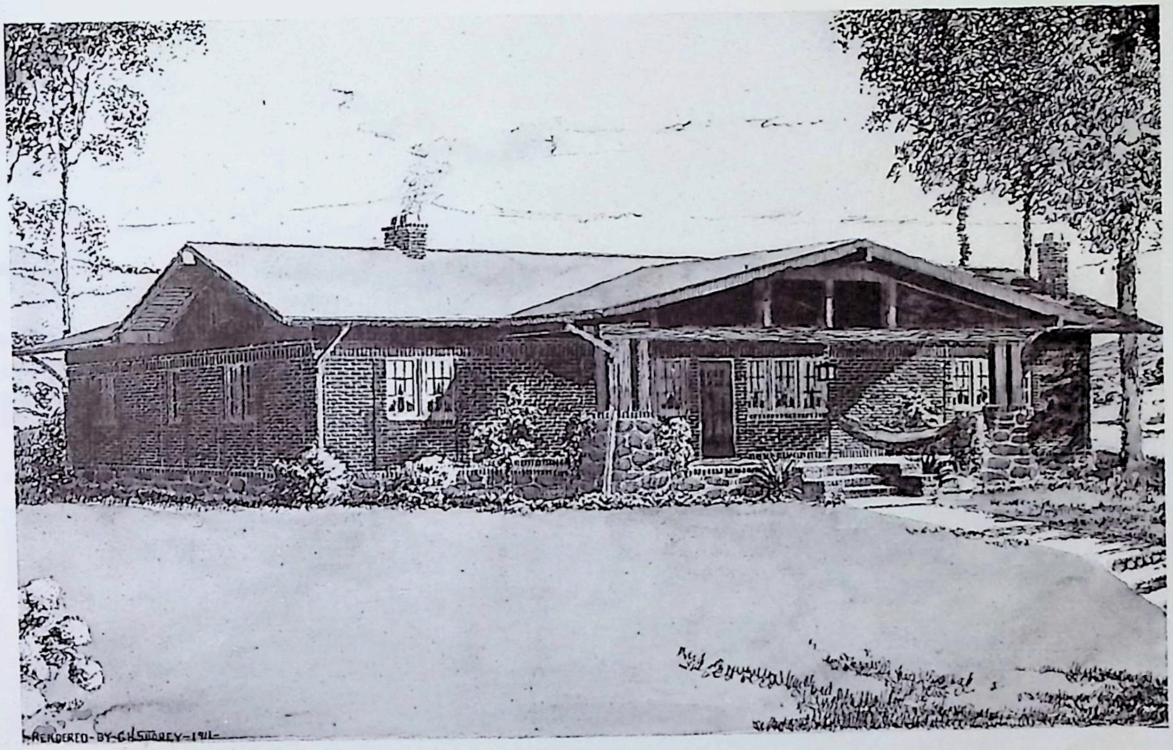
See page 5.

CRAFTSMAN BUNGALOW NO. 129: SITTING ROOM WITH VIEW OF DINING ROOM: THE USE OF BRICK IN INTERIOR FINISH IS OF ESPECIAL INTEREST.



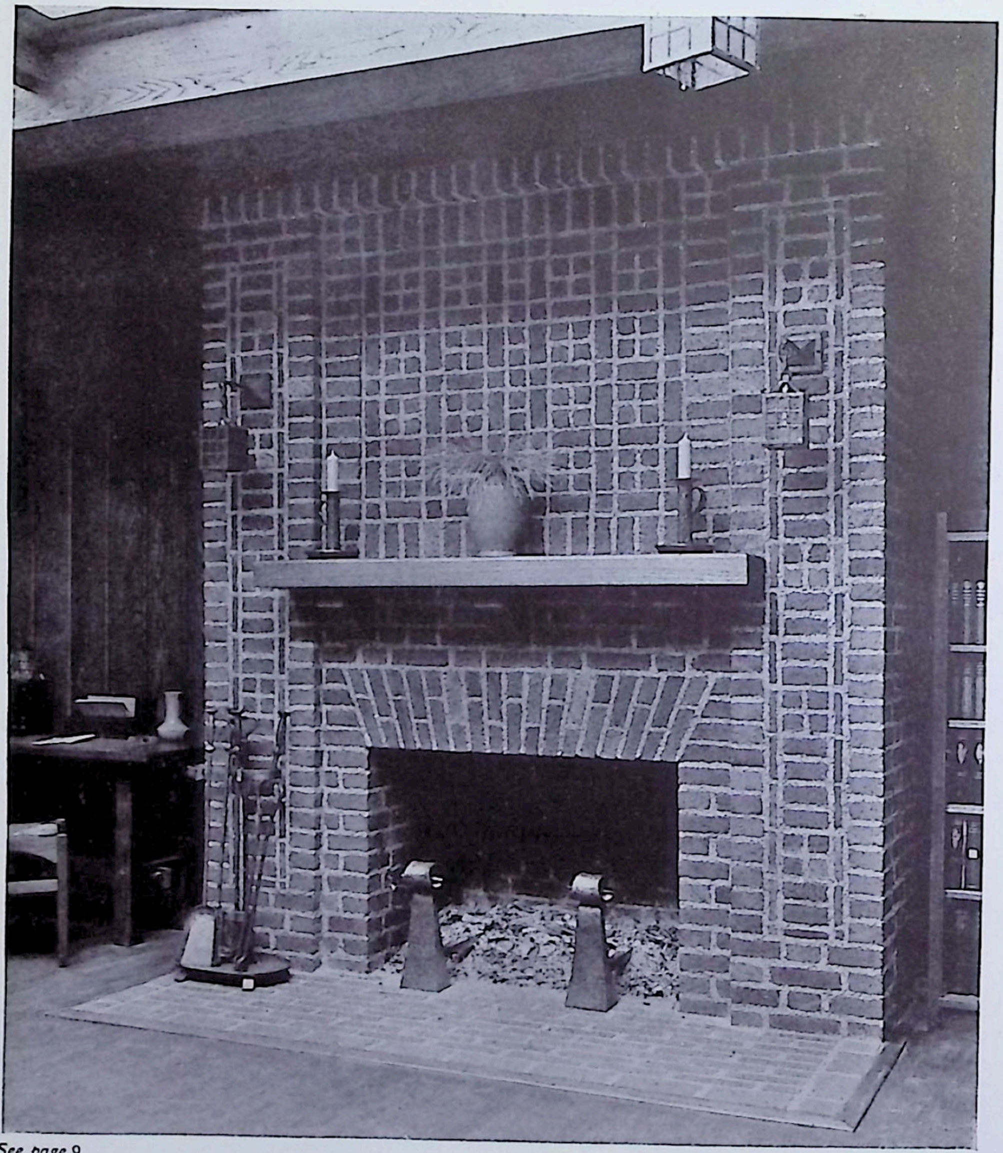
See page 7.

DETAIL OF PERGOLA COURT FOR CRAFTSMAN BUNGALOW NO. 130.



Designed by Gustav Stickley.

ANOTHER TYPE OF A CRAFTSMAN BRICK BUNGALOW WITH WOOD GABLES, NO. 130: FOR DETAIL OF COURT AND FLOOR PLAN SEE PAGE 558.



See page 9.

THE CRAFTSMAN FIREPLACE EQUIPPED WITH ANDIRONS FOR BURNING WOOD.

THE CRAFTSMAN FIREPLACE: A COMPLETE HEATING AND VENTILATING SYSTEM

From The Craftsman, March, 1912

A home never seems complete without some open fire where the family and friends can gather for that exchange of confidences, plans, hopes, ambitions which prevent life from becoming a grind of duty only. The open fire often furnishes the inspiration for the whole plan of a man's career.

An open fire has hitherto been something extra, an æsthetic supplement to the utilitarian furnace, a luxury rather than a necessity and consequently an additional expense. The furnace system has never been considered wholly satisfactory, for it has involved much cost and labor, waste of fuel and heat, danger from draughts, besides lacking the picturesqueness and hospitable comfort of the visible flame. On the other hand, the ordinary fireplace alone, while giving cheer and beauty to a room, has proved insufficient from a practical standpoint in really cold weather.

In designing the Craftsman fireplace, therefore, it has been my aim to embody in one construction both the friendly quality of the open hearth and the practical features of the furnace, utilizing the heat from the open fire to warm other rooms, and at the same time including in the heating system means for completely ventilating every apartment. This means the elimination of draughts from the opening and closing of windows, as the fireplace itself regulates the inlet and outlet of air and insures a constant wholesome supply throughout the house. Moreover, as the heater is installed in the main body of the building instead of in a cellar or basement, both the expense of excavation and waste of heat are obviated.

On account of the number of inquiries that have been received in regard to the Craftsman fireplace, I have thought it advisable to publish a description and set of drawings embodying improvements over the form as originally designed. These improvements have simplified not only the construction of the heater but also the work of installing it.

As shown in Figures 1, 2 and 3, the body is made of large sheets of steel, welded together by special welding machinery into one piece of continuous metal, making leakage of gas, smoke or dust an impossibility. It is so constructed that each smoke compartment is self-cleaning; the smoke area being vertical, there is no place for soot and moisture to collect. The heater is six feet high and four feet wide, and weighs complete with grates and other iron parts needed in the construction about 1,000 pounds.

Grates for the burning of coal or coke are supplied with each heater. These consist of only three parts and are easily and quickly set in place, no fastening being required. Figure 1 shows the removable metal hearth and grates in place for the burning of coal. The ashes sift through the grate and fall into the ash pit, which is so large that it needs emptying only once a season. This arrangement also eliminates the objectionable feature of dust from the ashes escaping into the room. If it is desired to burn wood upon an open hearth, the metal hearth and grates are removed and the opening into the ash pit is covered by a metal plate on which andirons may be placed, for burning wood, as shown in the photograph. As evident from both these illustrations, whether the fireplace is equipped with hearth and grates for the burning of coal, or is arranged with open hearth and andirons for the burning of wood, the impression is at once satisfactory and permanent.

The heater is set on the floor level, and the installation consists in merely building a four-inch brick wall around it. This wall, carried up to the ceiling and roofed over, forms the warm-air chamber above the furnace body. In one leg of the chimneypiece is set a fire-clay smoke flue, shown by dotted lines in Figure 2, which is connected with the body of the heater. I furnish one section of this flue lining having three holes, one which fits onto the flange around the smoke outlet of the heater, another which may be connected with a pipe from the kitchen range, and a third which opens by register into the room for the purpose of checking the coal fire, but which is kept closed when wood is burned. This flue starts at the bottom of the smoke outlet on the heater shown in Figure 3. This arrangement leaves the leg of the chimney below the flue free for the circulation of air.

Any mason can build the wall and make a correct installation. The cost of the brickwork compete with chimney is less than that for the usual fireplace of equal size. About 3,000 brick are required where there is a cellar and the chimney is carried up two stories. At a cost of $10.00 per thousand for brick and an equal sum per thousand for sand, cement and labor, the entire cost of brickwork, including $5 for flue lining, would be about $65.00.

I have used the common hard-burned brick as a basis for the above figures; where the owner desires to make the fireplace of plaster, stone, Tapestry brick or tile, the additional cost will depend, of course, upon the material selected. Hard-burned brick, at the above cost, if laid up with a wide mortar joint will make a beautiful fireplace. There are no limitations as to the design of the chimneypiece, the only requirement being that the inside measurements are kept to those shown in Figure 2.

The Craftsman fireplace may be installed in houses already built, as well as in new ones, the work in each case requiring a new chimney and the cost being practically the same. Because of the universal favor of the open fire it seems best to make only a medium-sized heater, as many people would prefer to have two or even more fireplaces in different parts of the house. The piping of warm air to the various rooms is then a small factor of the cost, as the pipes will necessarily be few and short. These are to be furnished by the owner, since they are always in stock at the local hardware store and are inexpensive.

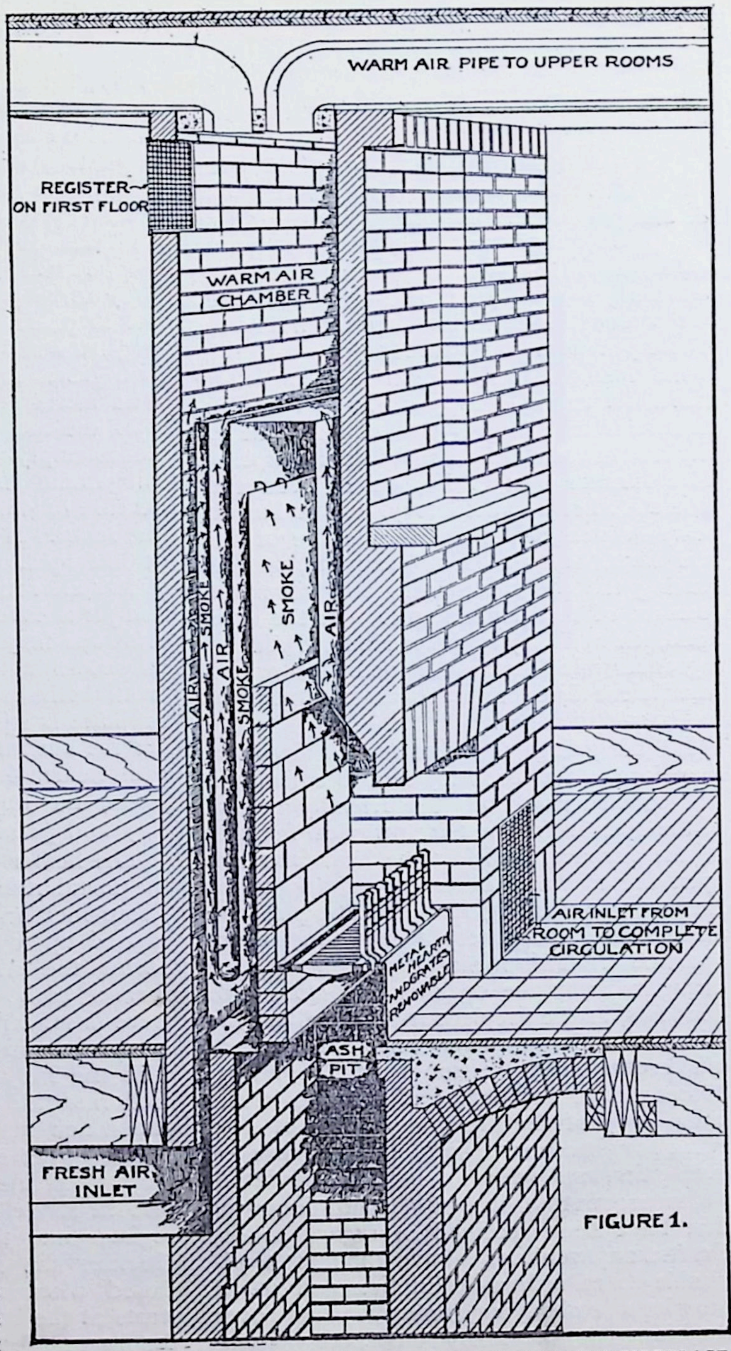

WARM AIR PIPE TO UPPER ROOMS
REGISTER ON FIRST FLOOR
WARM AIR CHAMBER
AIR
SMOKE
AIR
SMOKE
SMOKE
AIR
AIR INLET FROM ROOM TO COMPLETE CIRCULATION
METAL HEARTH ANDGRATES REMOVABLE
ASH PIT
FRESH AIR INLET

FIGURE 1.

VERTICAL SECTION THROUGH CENTER OF CRAFTSMAN FIREPLACE.

The operation of the heater itself is as follows: As shown in Figure 1, which is a vertical section through the center of the fireplace, the smoke generated by the fire passes up through the smoke compartment, down behind the steel smoke wall to the bottom of the heater, then up through another smoke compartment to the top of the heater, where it passes through the smoke outlet flue shown in Figure 3, and out through the chimney.

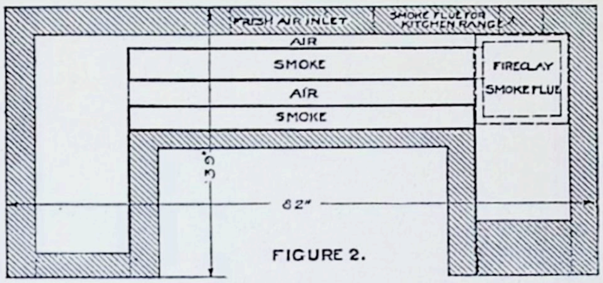


FIGURE 2.

SECTIONAL PLAN OF CRAFTSMAN FIREPLACE.

During its passage the smoke heats the steel walls of the smoke compartments, which in turn heat the air in the air compartments, as will be seen by reference to Figures 1 and 2. The air is thus caused to rise and pass up into the warm-air chamber. This action draws in outside air through the resh-air inlet, up through the air compartments into the warm-air chamber. At the same time air is also being drawn in from the room through the registers at the base of the fireplace, up through the air compartments into the warm-air chamber, where it mixes with the warmed fresh air from outside. The warmed air passes through the upper registers into rooms on the first floor, and also through the air pipes to the upper rooms. These air pipes and registers are proportioned in size so that each one will deliver the proper amount of air to the various rooms.

The warm air, upon entering each of the upper rooms, being lightest rises and spreads out in an even layer against the ceiling. This layer, as it cools, descends to the floor and passes out under the door, down the stairway opening to the lower floor. Part of this air is drawn into the fire and passes out through the chimney, and the rest is drawn into the lower registers. The circulation is rapid and positive, being accomplished, as seen, by gravitation, the heavier or colder air seeking the lowest level, and the lighter or warmer air the highest. The heater thus maintains a constant circulation between the various rooms as well as a movement of the air within the rooms, making a given air supply go much farther than with other heating systems.

In this circulation, the air absorbs all impurities, and naturally the zone of the most vitiated air is nearest the floor. It is from this zone that the fireplace draws immense quantities of air and discharges it through the chimney. An adult vitiates from 2,500 to 3,000 cubic feet of air per hour. The fireplace is constructed to admit 20,000 cubic feet of fresh air and discharge through the chimney the same amount of vitiated or used air per hour, thus making perfect ventilation for seven adults. In this way the air throughout the house is entirely replaced with fresh warmed air from outdoors every fifteen or twenty minutes. Doors and windows should be kept closed in order that the circulation of air may not be disturbed, for upon the proper circulation depends the efficient heating and ventilation of the house. Under these conditions, there can be no draughts.

The danger of the fireplace smoking is entirely eliminated, as the smoke and air openings are properly proportioned and, being part of the steel body, do not depend upon the judgment of the mason. Moreover, it is not only impossible for back draughts to force smoke into the room, but sparks are prevented from escaping through the flue, thereby removing all danger of fire on the roof.

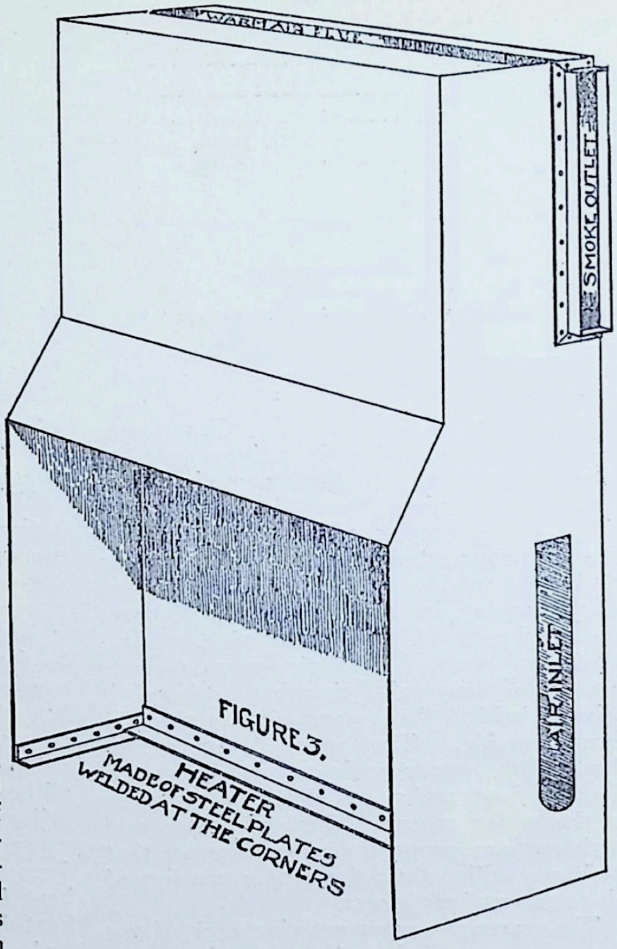
The conserving within the brick walls of all heat which has formerly been lost in the cellar; the circulating of volumes of air in contact with the large areas of smoke surface, thereby extracting practically all the heat from the smoke, and the radiation of heat direct into the room from the open fire, make the Craftsman fireplace a most efficient heating system. One fireplace will amply heat a seven-room house, with a consumption of from seven to ten tons of coal per year in a climate like that of our central States. The exact amount of fuel consumed, however, depends largely upon the exposure, the number and size of the windows, and the construction of the house. Coal or coke will furnish a more even and steady heat both day and night than wood, but because of the slow combustion due to the down draught, wood may be used as fuel with entire satisfaction from a standpoint of both economy and attention.

One of the most practical features of the Craftsman fireplace, as previously mentioned, is its adaptability to various forms of fuel, and the readiness with which the change can be made. For the burning of coal, I am making a shaker grate, and this, together with the metal hearth and upright grates, can be simply slid into place. As shown in Figure 1, the grate rests upon a half-inch shelf made by the projection of the brick; thus, when the grates and hearth are removed and the steel plate (which I also furnish) is in place, there is no mechanism left to indicate the transformation from grate fire to open hearth.

I have designed the fireplace in this way because, in most localities, there is an occasional chilly day in the summer when a little fire would be welcome, or a damp day when its warmth is needed to dry out the house. At such times a coal fire would give more heat and incur more trouble than would be desired, while a wood fire requires very little care, need not be kept in longer than it is wanted, is cheaper than coal and much quicker. Besides, the crackling logs on the open hearth, and cheery glimpse of sparks and flames seem more companionable for such a day than the more steady glow of coal behind a grate. Then, of course, there are many weeks during the late fall and early spring when a wood fire can be kept in all day, giving sufficient heat, so that the regular coal fires need not be started until the beginning of December nor kept in after March. Especially would this be the case in localities where wood is cheap, plentiful and easily procured. In any case, it is always pleasant to know that one can have a few logs ablaze at any time with very little trouble.

In the next number of THE CRAFTSMAN I am planning to have another article with further details about the fireplace, and I shall then show just how the fire may be checked or increased by the double regulating dampers which control the draughts.

The price of the steel heater complete with grates, registers and all metal parts (except the pipes needed to conduct warm air from the heater to rooms distant from it) amounts, with the freight, to $150.00. By combining this with the cost of the brickwork and the pipes one can easily install the heating plant complete inside of $250.00. The fireplace is sold only direct to users. I require the plans of each house in which it is to be installed, and from them I make and furnish free to the owner a heating layout which shows the location and size of warm-air pipes and registers, and includes complete plans and instructions for the mason to use in building the brickwork. I guarantee the fireplace to heat and ventilate properly each house in which it is installed, and by making the heating plant myself and selling it direct to users I am in a position to assume the entire responsibility.



PERSPECTIVE DRAWING OF STEEL HEATER FOR CRAFTSMAN FIREPLACE.

I am ready to make shipments of Craftsman fireplaces and shall be glad to hear from all those who are considering the installation of heating and ventilating systems. I shall also be pleased to correspond with any readers who may wish further explanation of the construction of the heater and the manner of its operation.

Gustav Stickley

The Advantages of Brick and Burned Clay in Home Building

There are many advantages in building of Burned Clay. In addition to these advantages there are the added safety and the added comforts.

Here are some of the advantages:

Brick is Fire Proof
Brick is Weather Proof
Brick is Moisture Proof
Brick is Acid Proof
Brick is Frost Proof
Brick is Tornado Proof
Brick is Repair Proof
Brick is Rat Proof
Brick is Loss Proof

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